2 August 1968

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Materiel Test Procedure 5-3-060 U. S. Army Artillery Board

# U. S. ARMY TEST AND EVALUATION COMMAND COMMODITY SERVICE TEST PROCEDURE

MISSILE STATION, ERECTION, VEHICULAR MOUNTED

#### 1. OBJECTIVE

The objective of this test procedure is to set forth the service test methodology, testing techniques, and minimum test requirements necessary for determining to what degree the missile station, erection, vehicular mounted, performs the mission as prescribed in the Qualitative Materiel Requirements (QMR) and Technical Characteristics (TC), and its suitability for artillery use.

#### 2. BACKGROUND

The most effective way for an ememy to counteract the effectiveness of missile fire is to prevent the missile unit from firing. When departing from the firing platform, missiles emit exhaust gases commonly known as "backblast" which normally creates a cloud of dust and debris in the vicinity of the launcher. During flight, the trajectory of the missile is described by a trail of smoke. Therefore, such "signature" signs invite counterbattery fire on the missile position and launch area, necessitating displacement, occupation of a new position, and timely missile erection for additional firing. Hence, the principle of tactical mobility is one of the key factors in successful missile employment. Various innovations of missile erectors and launchers have been used in the past, large electrical driven special purpose vehicles; modified 2-1/2 ton trucks; trailer mounted erecting and launch stations; and a self-propelled transporter-erector-launcher which not only transports the missile (less warhead), but provides the platform for loading, erecting, laying leveling, and supporting it on the proper firing azimuth until lift-off. The artillery has a continuing requirement for improved weapon handling equipment that can perform as the missile transporter, be emplaced quickly, and expedite firing with speed and precision.

#### REQUIRED EQUIPMENT

- a. Suitable Maneuver and Operational Areas to Include Applicable Water Courses, Road and Cross-Country Courses and Firing Range
  - b. Required Vehicle Shop Facilities
  - c. Radio and Wire Communication Facilities, as required
  - d. Photographic Equipment and Film, as required
  - e. Comparison and Companion Vehicles, as required
  - f. Equipment and Facilities, as required by the individual MTP's
  - g. Maintenance Support Facilities
  - h. Missiles and Inert Warheads, as required

#### 4. REFERENCES

- A. AR 705-5, Research and Development of Materiel
- B. AR 705-2300-8, Water Crossing Requirements for Future Combat

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#### and Tactical Vehicles

- C. USAMC Regulation 750-15, Maintenance of Supplies and Equipment.
- D. USATECOM Regulation 385-6, Safety Release.
- E. USATECOM Regulation 385-7, Safety Confirmation.
- F. USAMC Regulation 385-12, <u>Verification of Safety of Materiel</u> From Development through Testing and Supply to Disposition.
- G. USATECOM Regulation 385-13, Safety Statements.
- H. USAMC Manual 385-224, AMC Safety Manual.
- I. Applicable Qualitative Materiel Requirements (QMR).
- J. Applicable Technical Characteristics (TC).
- K. Applicable Military Characteristics (MC).
- L. MTP 2-3-500, Preoperational Inspection and Physical Characteristics.
- M. MTP 2-3-501, Safety Hazards.
- N. MTP 2-3-502, Maintenance.
- O. MTP 2-3-504, Cross-Country Mobility.
- P. MTP 2-3-505, Road Mobility.
- Q. MTP 2-3-507, Durability and Reliability.
- R. MTP 2-3-508, Stowage.
- S. MTP 2-3-509, Fording.
- T. MTP 2-3-510, Inland Waterway Operations.
- U. MTP 2-3-511, Security (Susceptibility to Detection).
- V. MTP 2-3-513, Fuel and Oil Consumption.
- W. MTP 2-3-514, Kit Evaluation.
- X. MTP 2-3-515, Kit Installation.
- Y. MTP 2-3-516, Human Factors Evaluation.
- Z. MTP 2-3-519, Surface Transportability.
- AA. MTP 2-3-502, Logistics Over-the-Shore (LOTS).
- AB. MTP 2-3-525, Blackout Conditions Test.
- AC. MTP 5-3-500, Preoperational Inspection and Physical Characteristics.
- AD. MTP 5-3-501, Battlefield Mobility (Battlefield Mobility, Tactical Flexibility and Portability).
- AE. MTP 5-3-503, Personnel Training.
- AF. MTP 5-3-504, Reliability and Durability (Quantitative Measure of Mean Time Between Failures and Overhaul, Repair Time).
- AG. MTP 5-3-505, Maintenance.
- AH. MTP 5-3-506, Compatibility with Related Equipment.
- AI. MTP 5-3-507, Human Factors Engineering (Compatibility of Man-Machine by Observation).
- AJ. MTP 5-3-510, Safety Hazards.
- AK. MTP 5-3-524, Personnel Training, Combat Vehicle Mounted Systems.
- AL. MTP 5-3-526, Emplacement, Action, and March Order.
- AM. MTP 5-3-534, Camouflage.
- AN. MTP 7-3-512, Air Drop Capability (Suitability of Equipment For).
- AO. MTP 7-3-515, Air Transport, Internal (Suitability of Equipment For).
- AP. MTP 7-5-516, Air Transport, External (Suitability of Equipment For).

# 5. SCOPE

#### 5.1 SUMMARY

This material test procedure describes the following tests conducted on vehicle mounted missile station erection:

# a. Pre-test Operations consisting of:

- 1) Preoperational Inspection and Physical Characteristics A study to ascertain the physical characteristics of the test item(s) and to verify that they are complete and in satisfactory condition prior to the start of testing.
- 2) Stowage Facilities A study to evaluate the adequacy of the test item stowage facilities to include compartments, racks, tie downs, and cabinets.

# b. Operational Characteristics consisting of:

- Mobility and Maneuverability A study to determine the ability of the test item to traverse paved roads, unpaved roads and cross-country terrain.
- 2) Battlefield Mobility A study to evaluate the battlefield mobility, tactical flexibility and portability of the test item under simulated combat conditions.
- 3) Emplacement, Preparation for Action, and March Order Capability A study to evaluate the ability of the average trained crew to emplace, prepare for action and march order the missile system.
- c. Compatibility with Related Equipment An evaluation of the compatibility of the test item with items of related equipment in the applicable missile system used in erecting and launching procedures.
- d. Vulnerability to Detection A study to determine the susceptibility of the test item to visual and aural detection, detection from the air and an evaluation of the degree of security that camouflage provides.
- e. Fording A study to determine the ability of the test item to ford streams of various depths and an evaluation of the deep fording kit, as applicable.
- f. Inland Waterway Operations A study to determine the capability of the test item to perform inland waterway operations.
- g. Logistics Over-the-Shore An evaluation of the suitability of the test item to participate in logistics over-the-shore operations.
  - h. Transportability consisting of:
    - 1) Surface Transportability A study to determine the capability of the test item to be transported by various carriers other than aircraft.
    - 2) Air Transportability A study to determine whether the test item can, effectively, be carried inside or outside various aircraft.
- i. Air Drop Capability A study to determine the suitability of the test item for air drop operations.
- j. Kit Installation and Evaluation A study to determine the effectiveness and adequacy of the various kits supplied for use with the test item.
- k. Durability and Reliability A study to determine the ability of the test item to operate for a given length of time over various types of terrain for a given number of miles, under various load conditions.

- l. Maintainability An evaluation of the suitability and compatibility of the test item toward the performance of scheduled and non-scheduled maintenance tasks and of the adequacy of the maintenance package, over the entire period of testing.
- m. Fuel and Oil Consumption A determination of the fuel and oil consumption of the test item over the entire period of testing.
- n. Human Factors Engineering A study to determine the suitability of the test item for operation by service personnel without causing undue fatigue, strain, and mental errors.
- o. Safety A determination of the safety hazards encountered during the loading, operation, and emplacement of the test item throughout the period of testing.
- p. Post-test Inspection A repeat of the preoperational inspections to determine the effects of the various subtests on the test item.
- q. Environmental Suitability A repeat of the applicable procedures of items b through p under desert, arctic, and tropic conditions to indicate environmental effect on the test item's operability.

#### 5.2 LIMITATIONS

This test procedure is intended for guidance in testing the mobility and erection capability of the test item only. Missile firing tests are performed in conjunction with other MTP's.

# 6. PROCEDURES

# 6.1 PREPARATION FOR TEST

# 6.1.1 Scheduling

#### 6.1.1.1 Personnel

- a. Prior to the arrival of the test item, ensure that driver, operation and maintenance personnel are adequately trained as prescribed in MTP 2-3-524, and MTP 5-3-503.
  - b. Record the following for all service personnel:
    - 1) Rank
    - 2) MOS
    - 3) Training time
    - 4) Experience

#### 6.1.1.2 Facilities and Equipment

- a. Select and schedule the use of test courses and testing sites, as required by the applicable subtest and the corresponding MTP.
- b. Upon notice of the arrival or estimated time of arrival of the test item, arrange for or secure the following:
  - 1) Engineering safety release or a safety statement from the engineering agency as prescribed by references 4D and 4G.

2) Required "standard" vehicle(s) for comparison testing

NOTE: 1. A "standard" vehicle is a tactical vehicle having characteristics similar to the test vehicle and one which may, ultimately, be replaced by the test item.

- 2. If the data to be obtained during the conduct of the various portions of this test are available (under the same conditions) for a "standard" vehicle, then "standard" vehicle testing shall not be required.
- 3) Maintenance support facilities, organization and personnel
- 4) The assistance of the U. S. Army Airborne, Electronics, and Special Warfare Board (USAAESWBD) in conducting the airborne operations required in the test
- 5) The assistance of U. S. Army Electronic Proving Ground (USAEPG) in the conduct of the susceptibility to detection evaluation
- c. Safe test procedures shall be followed throughout testing. All test operations shall be observed by project personnel and any unsafe or potentially unsafe conditions will be cause for testing to cease until all questionable conditions are resolved.

NOTE: Missile warhead sections, missile propellant sections, and stowable ammunition used in conjunction with the tests shall be inert and handled in accordance with reference 4H.

#### 6.1.2 Safety

- a. Verify that the test item safety statement is valid and up-to-date.
- b. Verify that all service test personnel have been adequately trained in the safety requirements pertaining to the test item and the testing.

# 6.1.3 Pre-test Operations

#### 6.1.3.1 Preoperational Inspection and Physical Characteristics

Perform the preoperational inspections and determine the physical characteristics of the test item and the associated missile system equipment as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

#### 6.1.3.2 Stowage Facilities

Determine the adequacy of the test item facilities for stowing cargo components, tools, spare parts, ammunition, accessories, etc., as described by the applicable sections of MTP 2-3-508.

#### 6.2 TEST CONDUCT

a. Tests shall be conducted concurrently with or in conjunction with other tests, whenever possible, so that the time taken to collect the required

data can be minimized.

b. Tests of paragraphs 6.2.1 through 6.2.15 shall be conducted under all environmental conditions encountered during testing at its normal site and when directed by the test plan under the extreme environmental conditions of paragraph 6.2.16.

#### 6.2.1 Operational Characteristics

The procedures of paragraphs 6.2.1.1 through 6.2.1.3 shall be performed under conditions of daylight, darkness and blackout conditions described in MTP 5-3-525.

# 6.2.1.1 Mobility and Maneuverability

- a. Determine the ability of the test item to traverse paved reads, unpaved roads and cross-country terrain as described by the applicable sections of MTP 2-3-505 and MTP 2-3-504.
- b. At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.1.2 Battlefield Mobility

- a. Determine the battlefield mobility of the test item as described by the applicable sections of MTP 5-3-501.
- b. At the completion of the tests, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.1.3 Emplacement, Preparation for Action and March Order Capability

Determine the ability of the average trained crew to emplace, prepare for action and march order the missile system as described by the applicable sections of MTP 5-3-526, and perform the following:

NOTE: The test item shall be emplaced after, approximately, each 200 miles of its travel cycle and all functional requirements shall be accomplished (including simulated missile firings or actual missile firings if the missiles are launched directly from the self-propelled carrier).

- a. Prior to emplacement, perform an operational check as described in the applicable technical manual to ensure the following:
  - 1) Compatibility of the launcher/erector with its checkout equipment
  - 2) Operability of the launch equipment
  - 3) Operability of power sources, maintenance equipment and related support equipment

NOTE: Instrumentation must be energized and in use, which means that the instrumentation be either shielded from, or invulnerable to the test environment.

b. At the completion of emplacement, repeat the procedures of step a, and subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.2 Compatibility and Related Equipment

Determine the compatibility of the test item with all standard and development items used in erecting missiles for launch as described in the applicable sections of MTP 5-3-506 and record the following:

NOTE: Compatibility determination will be based on the percentage of standard items suitable for use without requirements of modification.

- a. Nomenclature and identity of all standard components or devices used with the test item not requiring modification.
- b. Nomenclature, identity and comments pertaining to the compatibility of all developmental type items used.

# 6.2.3 Vulnerability to Detection

- a. Determine the susceptibility of the test item to visual and aural detection as described by the applicable sections of MTP 2-3-511.
- b. Evaluate the effectiveness of camouflage in providing visual and aura security to the test item as described by the applicable sections of MTP 5-3-534.
  - NOTE: 1. Utilize aerial observation and aerial photograph in the security evaluations for both the camouflaged and uncamouflaged test item.
    - 2. Enlist the aid of the U. S. Army Electronic Proving Ground (USAEPG) in the conduct of portions of this test.
- c. Steps a and b shall be conducted during conditions of daylight, darkness, and blackout conditions as described in MTP 5-2-525.

# 6.2.4 Fording

- a. Determine the fording capability of the test item as described by the applicable sections of MTP 2-3-509.
  - NOTE: If a deep fording kit is provided, the ease of installation shall be noted and the time and number of personnel required for its installation shall be recorded.
- b. At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.5 Inland Waterway Operations

a. Determine the capability of the test item to perform the required

inland waterway operations as described by the applicable sections of MTP 2-3-510.

b. At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.6 Logistics Over-the-Shore

- a. Determine the capability of the test item to participate in logistics over-the-shore operations as described by the applicable sections of MTP 2-3-520.
- b. At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.7 <u>Transportability</u>

## 6.2.7.1 Surface Transportability

- a. Determine the surface transportability of the test item as described by the applicable sections of MTP 2-3-519.
- b. At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.7.2 Air Transportability

NOTE: The conduct of airborne operations shall be the responsibility of the U.S. Army Airborne Electronics, and Special Warfare Board (USAAESWBD).

#### a. For Internal Transport:

- 1) Determine the suitability of the test item for internal air transport as described by the applicable sections of MTP 7-3-515.
- 2) At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

#### b. For External Transport:

- 1) Determine the suitability of the test item for external air transport as described by the applicable sections of MTP 7-3-516.
- 2) At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.8 Air Drop Capability

a. Determine the suitability of the test item for air drop operations as described by the applicable sections of MTP 7-3-512.

NOTE: The conduct of airborne operations shall be the responsibility of the U. S. Army Airborne, Electronics and Special Warfare

# Board (USAAESWBD).

b. At the completion of testing, subject the test item to the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.9 Kit Installation and Evaluation

Perform the kit installation requirements as described by the applicable sections of MTP 2-3-515. Evaluate the kits in terms of the criteria set forth in the applicable sections of MTP 2-3-514.

# 6.2.10 <u>Durability and Reliability</u>

Determine the durability and the reliability of the test item and the associated missile system equipment over the entire period of testing as described by MTP 2-3-507 and the applicable sections of MTP 5-3-504.

NOTE: The total mileage accumulated during the conduct of testing shall exceed 4000 miles. If, at the conclusion of testing, the total mileage does not exceed 4000, then the additional mileage shall be accumulated as follows:

- a. 50% on secondary roads
- b. 25% on paved roads
- c. 25% on cross-country terrain

# 6.2.11 Maintainability

Perform the following:

- a. Complete authorized maintenance tasks in accordance with the test item maintenance allocation chart, technical manuals, and USATECOM Regulation 750-15.
- b. Record the time and personnel required to perform scheduled and non-scheduled maintenance tasks throughout the period of testing.
- c. Determine the accuracy and evaluate the adequacy of the test item maintenance package.
- d. Determine the maintainability of the test item as described by the applicable sections of MTP 2-3-502 and MTP 5-3-505.
  - e. Record the following:
    - 1) Test item down-time (cumulative)
    - 2) Time taken between repairs and reason, if appropriate
    - 3) Frequency of repairs
    - 4) Nomenclature of repair parts used

#### 6.2.12 Fuel and Oil Consumption

Determine the fuel and oil consumption of the test item, if applicable, during the period of testing as described by the applicable sections of MTP 2-3-513.

# 6.2.13 Human Factors Engineering

Determine the suitability of the test item design with respect to the man-machine relationship throughout the period of testing as described by the applicable sections of MTP 2-3-516 and MTP 5-3-507.

Determine and record the suitability and compatibility of the test item with the service personnel who will operate and service it, with regard to their skills, aptitudes and physical limitations.

NOTE: Each test item detail requiring human attention and/or manipulation shall be observed and evaluated as well as those for the complete missile system.

# 6.2.14 <u>Safety</u>

- a. Determine the test item safety hazards resulting from storage, transport, operation and maintenance as described by the applicable procedures of MTP 2-3-501 and MTP 5-3-510.
- b. Prepare a safety confirmation in accordance with USATECOM Regulation 385-7.

# 6.2.15 Post-Test Inspection

At the completion of testing, the test item shall be subjected to the technical and preoperational inspections as described by the applicable procedures of MTP 2-3-500 and MTP 5-3-500.

# 6.2.16 Environmental Suitability

The applicable procedures of paragraphs 6.2.1 through 6.2.15 shall be conducted under the actual or simulated desert, arctic, and tropic environmental test conditions as described in MTP 2-4-001 (desert), MTP 2-4-002 (arctic), an MTP 2-4-003 (tropic) to determine the effects of those conditions on the operability of the test item with emphasis on the following, as applicable:

- a. Mobility
- b. Time required for emplacement and march order
- c. Time required to complete missile erection operations when dressed in special clothing for the environmental conditions
- d. Effects of extreme temperatures on lubricants, or requirements for special lubricants, knobs, handles, cables, and machined movable parts
- e. Effects of heavy rainfall, continuous high relative humidity of the air, dust, insects, and fungi (mold, mildew) and slime
- f. Effects of corrosion on metal components, fabrics, and glass optical instruments during daily usage and extended storage periods

#### 6.3 TEST DATA

#### 6.3.1 Preparation for Test

#### 6.3.1.1 Personnel

- a. Record data, as described in the applicable sections of MTP 2-3-524, and MTP 5-3-503.
  - b. Record the following for all service personnel:
    - 1) Rank
    - 2) MOS
    - 3) Training time, in MOS, in months
    - 4) Experience, in months

# 6.3.1.2 Pre-Test Operations

# 6.3.1.2.1 Preoperational Inspection and Physical Characteristics -

Record data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

#### 6.3.1.2.2 Stowage Facilities -

Record data, collected as described in the applicable sections of MTP 2-3-508.

# 6.3.2 Test Conduct

Record the environmental test site (desert, arctic, tropic, normal)

# 6.3.2.1 Operational Characteristics

Record the following for each test conducted:

- a. Time of day
- b. Lighting condition (daylight, darkness)
- c. Weather condition (clear, rainy, snow, sleet, etc.)
- d. Ambient temperature, in degrees F

#### 6.3.2.1.1 Mobility and Maneuverability -

- a. Record data, collected as described in the applicable sections of MTP 2-3-505 and MTP 2-3-504.
- b. Record inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

#### 6.3.2.1.2 Battlefield Mobility -

- a. Record data, collected as described in the applicable sections of MTP 5-3-501.
- b. Record inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.
- 6.3.2.1.3 Emplacement, Preparation for Action and March Order Capbility -

- a. Record data as required by the applicable sections of MTP 5-3-526.
- b. Record the number of simulated firings during each emplacement.
- c. For missile system accessory equipment, record:
  - 1) Time of checkout (prior to emplacement, after emplacement)
  - 2) Operability of:
    - a) Checkout equipment
    - b) Launch equipment
    - c) Power sources
    - d) Maintenance equipment
    - e) Other support equipment
- d. Record inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

# 6.3.2.2 Compatibility and Related Equipment

Record the following:

- a. Data, collected as described in the applicable sections of MTP 2-3-512 and MTP 5-3-506.
  - b. For standard items:
    - 1) Total number checked
    - 2) Nomenclature and identity of items not requiring modification
  - c. For each developmental item:
    - 1) Nomenclature and identity
    - 2) Comments concerning compatibility

#### 6.3.2.3 Vulnerability to Detection

- a. Record data, collected as described in the applicable sections of MTP 2-3-511.
- b. Record data, collected as described in the applicable sections of MTP 5-3-534.
  - c. Record observer comments on the aerial detection operations for:
    - 1) Uncamouflaged test item
    - 2) Camouflaged test item

#### 6.3.2.4 Fording

- a. Record data, collected as described in the applicable sections of MTP 2-3-509.
- b. Record the following for a deep fording kit installation, as applicable:
  - 1) Time required, in hours

- 2) Number of personnel required
- 3) Comments on the ease of kit installation
- c. Record inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

## 6.3.2.5 Inland Waterway Operations

- a. Record data, collected as described in the applicable sections of MTP 2-3-510.
- b. Record inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

# 6.3.2.6 Logistics Over-the-Shore

- a. Record data, collected as described in the applicable sections of MTP 2-3-520.
- b. Record inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

#### 6.3.2.7 Transportability

# 6.3.2.7.1 Surface Transportability -

#### Record the following:

- a. Data, collected as described in the applicable sections of MTP 2-3-519.
- b. Inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

# 6.3.2.7.2 Air Transportability -

#### Record the following:

- a. Data, collected as described in the applicable sections of MTP 7-3-515.
- b. Data, collected as described in the applicable sections of MTP 7-3-516.
- c. Inspection data, collected as described in the applicable sections of MTP 2-3-500 and MTP 5-3-500.

#### 6.3.2.8 Air Drop Capability

- a. Record data, collected as described in the applicable sections of MTP 7-3-512.
- b. Record inspection data, collected as described in MTP 2-3-500 and MTP 5-3-500.

#### 6.3.2.9 Kit Installation and Evaluation

- a. Record data, collected as described in the applicable sections of MTP 2-3-515.
- b. Record data, collected as described in the applicable sections of MTP 2-3-514.
- 6.3.2.10 Durability and Reliability
- a. Record data, collected as described in the applicable sections of MTP 2-3-507 and MTP 5-3-504.
  - b. If additional mileage is accumulated, record the following:
    - 1) Secondary road mileage
    - 2) Paved road mileage
    - 3) Cross-country mileage

# 6.3.2.11 Maintainability

Record the following:

- a. Comments by maintenance personnel on the accuracy and adequacy of the test item maintenance package.
- b. Data, collected as described in the applicable sections of MTP 2-3-502.
  - c. Time required to perform:
    - 1) Scheduled maintenance tasks
    - 2) Non-scheduled maintenance tasks
  - d. Test item down-time (cumulative), in hours
  - e. Time taken between repairs, in hours, and reason if appropriate
  - f. Frequency of repairs, in days
  - g. Nomenclature of repair parts used

# 6.3.2.12 Fuel and Oil Consumption

Record data, collected as described in the applicable sections of MTP 2-3-513.

#### 6.3.2.13 Human Factors Engineering

- a. Record data, collected as described in the applicable sections of MTP 2-3-516.
- b. Record service personnel comments on the suitability and compatibility of the test item with respect to their skill levels, aptitudes and physical limitations in:
  - 1) Operation
  - 2) Maintenance

#### 6.3.2.14 Safety

Record data, collected as described in the applicable sections of MTP 2-3-501 and MTP 5-3-510.

## 6.3.2.15 Post-Test Operations

Record data, collected as described under the applicable sections of MTP 2-3-500 and MTP 5-3-500.

#### 6.4 DATA REDUCTION AND PRESENTATION

Data obtained from each performance section shall be summarized, compared and evaluated according to procedures described in the individual MTP's. Appropriate charts, graphs and tables shall be used to show the summary and comparison of the test data. Special consideration shall be given to any condition or circumstance that may have contributed to any test result.

Calculations shall be performed as specified by the individual MTP's and all photographs, motion pictures and illustrations shall be properly identified.

All qualitative data collected shall be evaluated against the QMR and TC to determine the degree of fulfillment of the performance specifications.

Data collected under extreme weather conditions shall be compared to that which was collected under normal conditions.

A safety confirmation based on the data of paragraph 6.3.2.14 shall be presented in accordance with USATECOM Regulation 385-7.